

Rationale

- Augmentative and alternative communication (AAC) technologies improve communication outcomes for individuals with autism spectrum disorder (ASD) who experience complex communication needs
- **Visual scene displays (VSDs)** are one type of AAC display that depict meaningful events from an individual's life in a photograph, with vocabulary embedded as hotspots
 - VSDs lessen cognitive and linguistic demands of use by preserving the context within meaningful events
- However, current AAC technologies use static VSDs that fail to capture the **dynamic routines** that require communication within real-world activities
- Additionally, current technologies that *do* use dynamic supports (e.g., video modeling apps) do not integrate communication supports
- This study used videos with integrated VSDs to capitalize on the **positive effects of both video modeling and VSDs** to support both communication and participation in real-world environments

Research Question

- Do videos with integrated VSDs on the EasyVSD app (InvoTek, Inc.) increase the percent of steps completed during community and vocational activities by an adolescent with ASD and complex communication needs?



Methods

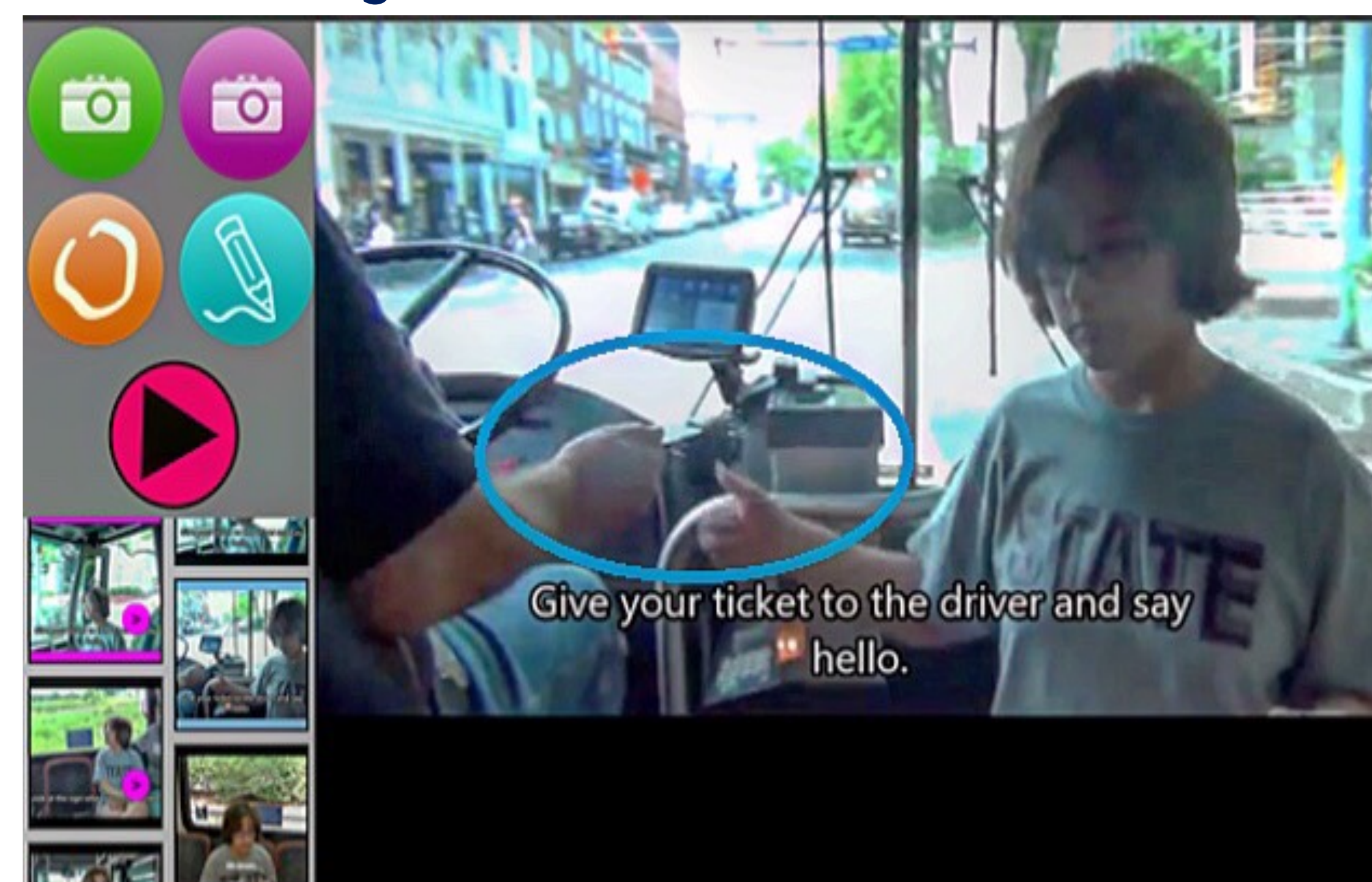
- **Pilot case study** that explored the effects of the video VSD app on participation in **three real world contexts**:
 - Working at the print shop
 - Using public transportation
 - Performing a shredding job at school
- **Task analyses** identified the required steps for each activity (including steps that involved communication)

Participant

- 16 year-old female, Lena, with ASD
- Served in an inclusive high school program
- Used some speech
 - Did not express all communicative functions independently
 - Expressive communication characterized by echolalia and scripting
- Highly prompt dependent

Materials

- **Tablet with EasyVSD app**
 - Primary display
 - Programming icons and play/pause button
 - Menu with thumbnail displays to support navigation

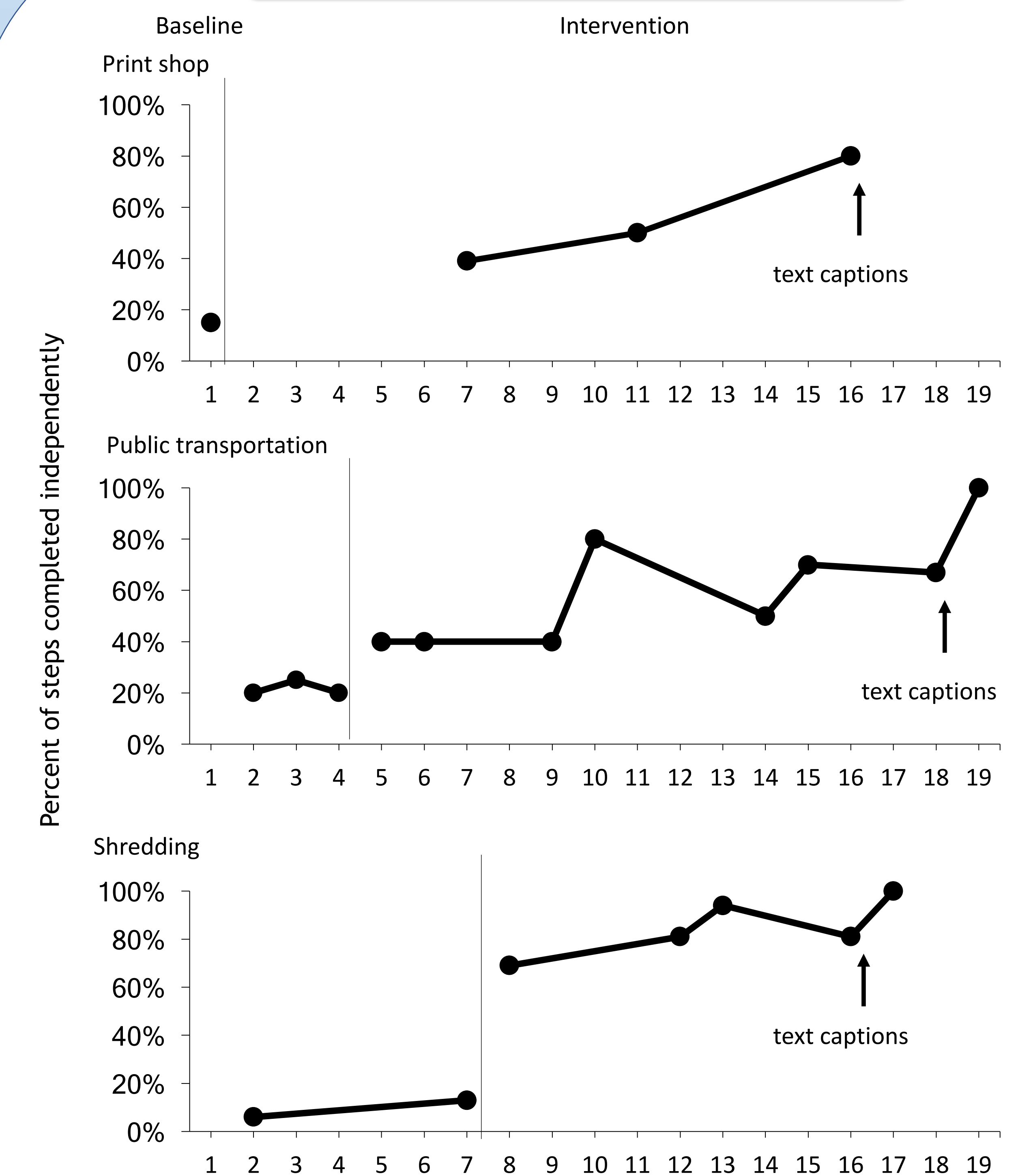


- **Videos with integrated VSDs**
 - Video self-models of the participant
 - ~10s video segments corresponded to steps in task analysis
 - Hotspots added to fulfill communicative opportunities
 - Automatic pausing of video at hotspots
 - Text captions

Procedures

- **Baseline:** Data were collected during target tasks as they typically occurred, without the use of the video VSDs
- **Intervention:** Tasks were completed while using the EasyVSD app (independent variable)
 - Least-to-most prompting hierarchy to encourage use of the app
 - Video review prior to each session

Results



Discussion & Implications

- Results of this study suggested that the introduction of the EasyVSD app with VSDs integrated within videos was associated with an increase in the percent of steps completed independently across three meaningful, real-world tasks.
- Several factors may have contributed to effectiveness of this intervention:
 - VSDs depicted vocabulary in meaningful contexts
 - Video self-prompting supported independent task completion
 - Task analyses broke complex tasks into manageable units
 - Videos automatically paused after each step and briefly highlighted hotspots to prompt completion and communication
 - Least-to-most prompting promoted independence
- Videos with integrated VSDs may increase independence and decrease reliance on prompting from staff
- Ultimately, this type of app may allow individuals with with ASD and complex communication needs to have greater access to employment opportunities, meaningful participation in society, and higher quality of life.

References & Acknowledgements

Findings presented here reported in: Videos with integrated AAC visual scene displays to enhance participation in community and vocational activities: Pilot case study with an adolescent with autism spectrum disorder. *Perspectives of the ASHA Special Interest Groups*, 2, 55-69. doi:10.1044/persp2.sig12.55

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